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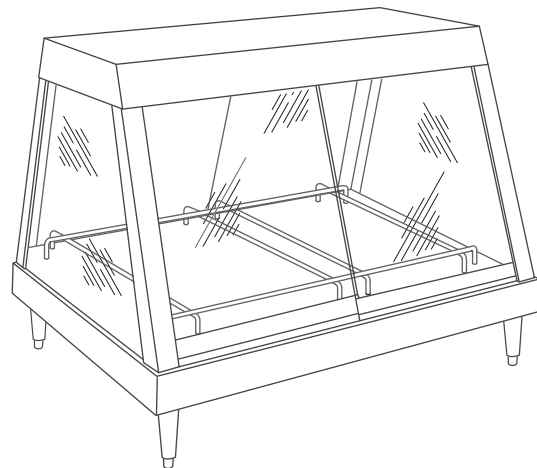
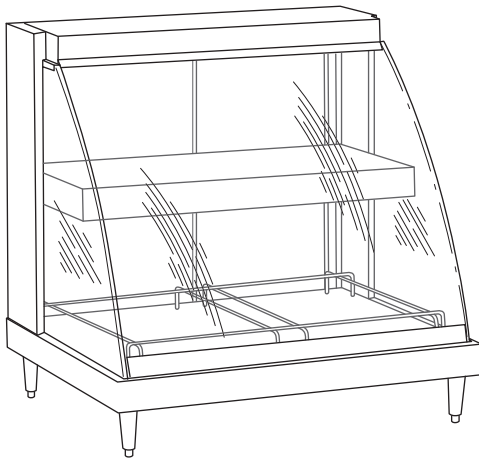
GLO-RAY®

Heated Display Cases

GRCD and GRHD Series

Installation and Operating Manual

P/N 07.04.275.00



⚠ WARNING

Do not operate this equipment unless you have read and understood the contents of this manual! Failure to follow the instructions contained in this manual may result in serious injury or death. This manual contains important safety information concerning the maintenance, use, and operation of this product. If you're unable to understand the contents of this manual, please bring it to the attention of your supervisor. Keep this manual in a safe location for future reference.

⚠ ADVERTENCIA

No opere este equipo al menos que haya leído y comprendido el contenido de este manual! Cualquier falla en el seguimiento de las instrucciones contenidas en este manual puede resultar en un serio lesión o muerte. Este manual contiene importante información sobre seguridad concerniente al mantenimiento, uso y operación de este producto. Si usted no puede entender el contenido de este manual por favor pregunte a su supervisor. Almacenar este manual en una localización segura para la referencia futura.

⚠ AVERTISSEMENT

Ne pas utiliser cet équipement sans avoir lu et compris le contenu de ce manuel ! Le non-respect des instructions contenues dans ce manuel peut entraîner de graves blessures ou la mort. Ce manuel contient des informations importantes concernant l'entretien, l'utilisation et le fonctionnement de ce produit. Si vous ne comprenez pas le contenu de ce manuel, veuillez le signaler à votre supérieur. Conservez ce manuel dans un endroit sûr pour pouvoir vous y référer plus tard.

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IMPORTANT OWNER INFORMATION

Record the model number, serial number (specification label located on the back of the unit), voltage, and purchase date of the unit in the spaces below. Please have this information available when calling Hatco for service assistance.

Model No. _____

Serial No. _____

Voltage _____

Date of Purchase _____

Register your unit!

Completing online warranty registration will prevent delay in obtaining warranty coverage. Access the Hatco website at **www.hatcocorp.com**, select the *Parts & Service* pull-down menu, and click on "Warranty Registration".

Business Hours: 8:00 AM to 5:00 PM
Central Standard Time (C.S.T.)

(Summer Hours: June to September –
8:00 AM to 5:00 PM C.S.T.
Monday through Thursday
8:00 AM to 2:30 PM C.S.T. Friday)

Telephone: (800) 558-0607; (414) 671-6350

E-mail: partsandservice@hatcocorp.com

Fax: (800) 690-2966 (Parts and Service)
(414) 671-3976 (International)



24 Hour 7 Day Parts and Service
Assistance available in the United States
and Canada by calling (800) 558-0607.

Additional information can be found by visiting our web site at **www.hatcocorp.com**.

INTRODUCTION

Hatco Glo-Ray® Heated Display Cases are designed to hold prepared foods for prolonged periods of time while maintaining that "just made" quality. Hatco Display Cases provide the best environment for food products by regulating the air temperature. Display models equipped with humidity control also balance the humidity level. The use of controlled heat maintains serving temperature and texture longer than conventional holding equipment.

Hatco Glo-Ray Heated Display Cases are products of extensive research and field testing. The materials used were selected for maximum durability, attractive appearance, and optimum performance. Every unit is inspected and tested thoroughly prior to shipment.

This manual provides the installation, safety, and operating instructions for Hatco Glo-Ray Heated Display Cases. Hatco recommends all installation, operating, and safety instructions appearing in this manual be read prior to installation or operation of a unit.

Safety information that appears in this manual is identified by the following signal word panels:

WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to personal injury.

IMPORTANT SAFETY INFORMATION



Read the following important safety information before using this equipment to avoid serious injury or death and to avoid damage to equipment or property.



WARNING

ELECTRIC SHOCK HAZARD:

- Plug unit into a properly grounded electrical receptacle of the correct voltage, size, and plug configuration. If plug and receptacle do not match, contact a qualified electrician to determine and install the proper voltage and size electrical receptacle.
- Turn OFF power switch, unplug power cord, and allow unit to cool before performing any cleaning, adjustments, or maintenance.
- Unit is not weatherproof. Locate unit indoors where ambient air temperature is a minimum of 70°F (21°C).
- DO NOT submerge or saturate with water. Unit is not waterproof. Do not operate if unit has been submerged or saturated with water.
- Do not steam clean or use excessive water on unit.
- This unit is not “jet-proof” construction. Do not use jet-clean spray to clean this unit.
- Do not pull unit by power cord.
- Discontinue use if power cord is frayed or worn.
- Do not attempt to repair or replace a damaged power cord. The cord must be replaced by Hatco, an Authorized Hatco Service Agent, or a person with similar qualifications.
- This unit must be serviced by qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.
- Use only Genuine Hatco Replacement Parts when service is required. Failure to use Genuine Hatco Replacement Parts will void all warranties and may subject operators of the equipment to hazardous electrical voltage, resulting in electrical shock or burn. Genuine Hatco Replacement Parts are specified to operate safely in the environments in which they are used. Some aftermarket or generic replacement parts do not have the characteristics that will allow them to operate safely in Hatco equipment.

FIRE HAZARD: Locate unit a minimum of 1” (25 mm) from combustible walls and materials. If safe distances are not maintained, discoloration or combustion could occur.

EXPLOSION HAZARD: Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance.

Make sure food product has been heated to the proper food-safe temperature before placing in unit. Failure to heat food product properly may result in serious health risks. This unit is for holding pre-heated food product only.

Hatco Corporation is not responsible for actual food product serving temperature. It is the responsibility of the user to ensure that food product is held and served at a safe temperature.

Use only light bulbs that meet or exceed National Sanitation Foundation (NSF) standards and are specifically designed for food holding areas. Breakage of light bulbs not specially coated could result in personal injury and/or food contamination.



WARNING

Do not place food product directly onto shelves. Food product must be wrapped, boxed, or on a food pan.

Make sure all operators have been instructed on the safe and proper use of the unit.

This unit is not intended for use by children or persons with reduced physical, sensory, or mental capabilities. Ensure proper supervision of children and keep them away from the unit.

This unit has no “user-serviceable” parts. If service is required on this unit, contact an Authorized Hatco Service Agent or contact the Hatco Service Department at 800-558-0607 or 414-671-6350; fax 800-690-2966; or International fax 414-671-3976.



CAUTION

BURN HAZARD:

- Some exterior surfaces on unit will get hot. Use caution when touching these areas.
- Hot water in unit may cause scalding injury. Allow unit to cool before draining or cleaning.

Locate unit at proper counter height in an area that is convenient for use. Location should be level to prevent unit or its contents from falling accidentally and strong enough to support weight of unit and contents.

The National Sanitation Foundation (NSF) requires that units over 36” (914 mm) in width or weighing more than 80 lbs. (36 kg) either be sealed to or raised above the installation surface. If unit cannot be sealed at the point of use, 4” (102 mm) legs are included to allow for proper cleaning access below unit.

NOTICE

Do not lay unit on the side with control panel or on front of a curved glass unit. Damage to unit could occur.

Do not drag or slide unit when moving or installing. Carefully lift unit to prevent the rubber feet from tearing off.

Use non-abrasive cleaners and cloths only. Abrasive cleaners and cloths could scratch finish of unit, marring its appearance and making it susceptible to soil accumulation.

Use of distilled water in the water reservoir of humidified units is recommended to preserve the life of electrical and mechanical components. If non-distilled water is used, the reservoir will require periodic cleaning and deliming (refer to the MAINTENANCE section for cleaning procedure). Unit failure due to lime or mineral deposits is not covered under warranty.

Clean unit daily to avoid malfunctions and maintain sanitary operation.

MODEL DESCRIPTION

All GRCD Models

All GRCD Heated Display Cases are constructed of stainless steel and aluminum with a tempered, curved front glass panel, hinged or sliding rear glass doors, and glass side panels. The display cases feature a thermostatically-controlled heated base, infrared overhead heating elements, incandescent display lights, 4" (102 mm) adjustable legs, and a 6' (1829 mm) cord and plug set.

Options and accessories available include pan skirts, halogen display lights, sign holders, mirrored glass sliding doors, and flip-up front doors. Refer to the OPTIONS AND ACCESSORIES section for details.

Model GRCD-1P

The GRCD-1P is designed to hold one standard full size food pan. The unit has one hinged rear door.

Model GRCD-1PD

The GRCD-1PD is designed to hold up one standard full size food pan on the bottom shelf and one standard 1/2-size or two 1/3-size food pans on the top stainless steel shelf. The unit has one hinged rear door.

Model GRCD-2P

The GRCD-2P is designed to hold up to two standard full size food pans. The unit has two sliding rear doors.

Model GRCD-2PD

The GRCD-2PD is designed to hold up to two standard full size food pans on the bottom shelf and one standard full size plus a 1/3-size food pan on the top stainless steel shelf. The unit has two sliding rear doors.

Model GRCD-3P

The GRCD-3P is designed to hold up to three standard full size food pans. The unit has two sliding rear doors.

Model GRCD-3PD

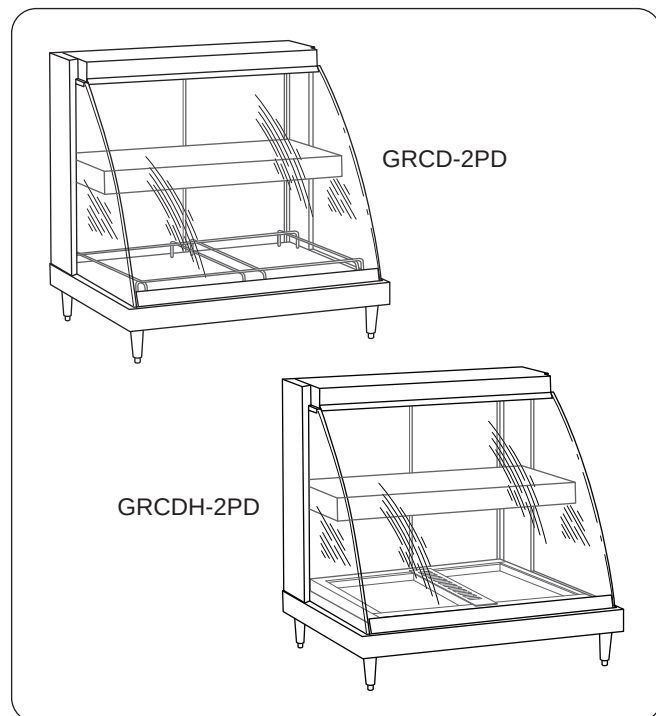
The GRCD-3PD is designed to hold up to three standard full sized food pans on the bottom shelf and two standard full size food pans on the top stainless steel shelf. The unit has two sliding rear doors.

GRCDH Series

The GRCDH series (Humidified) is similar to the GRCD series (Non-Humidified), but come equipped with a thermostatically-controlled, adjustable humidity system. A 3 quart (2.8 liter) capacity heated water reservoir in the base provides humidity to extend food holding time up to four hours.

GRCDH models are available in one, two, or three pan sizes and with single or dual shelves.

NOTE: GRCD models cannot be converted to GRCDH models.



GRCD Models

MODEL DESCRIPTION

All GRHD Models

All GRHD Heated Display Cases are constructed of stainless steel and aluminum with rear glass sliding doors and full-view tempered glass on the front and sides. The display cases feature a thermostatically-controlled heated base, infrared overhead heating elements, incandescent display lights, 4" (102 mm) adjustable legs, and a 6' (1829 mm) cord and plug set.

Options and accessories available include pan skirts, halogen display lights, sign holders, mirrored glass sliding doors, flip-up doors, and a slant leg kit. Refer to the OPTIONS AND ACCESSORIES section for details.

Model GRHD-2P

The GRHD-2P is designed to hold up to two standard full size food pans.

Model GRHD-2PD

The GRHD-2PD is designed to hold up to two standard full size food pans on the bottom shelf and two standard 1/2-size food pans on the top shelf.

Model GRHD-3P

The GRHD-3P is designed to hold up to three standard full size food pans.

Model GRHD-3PD

The GRHD-3PD is designed to hold up to three standard full size food pans on the bottom shelf and three standard 1/2-size food pans on the top shelf.

Model GRHD-4P

The GRHD-4P is designed to hold up to four standard full size food pans.

Model GRHD-4PD

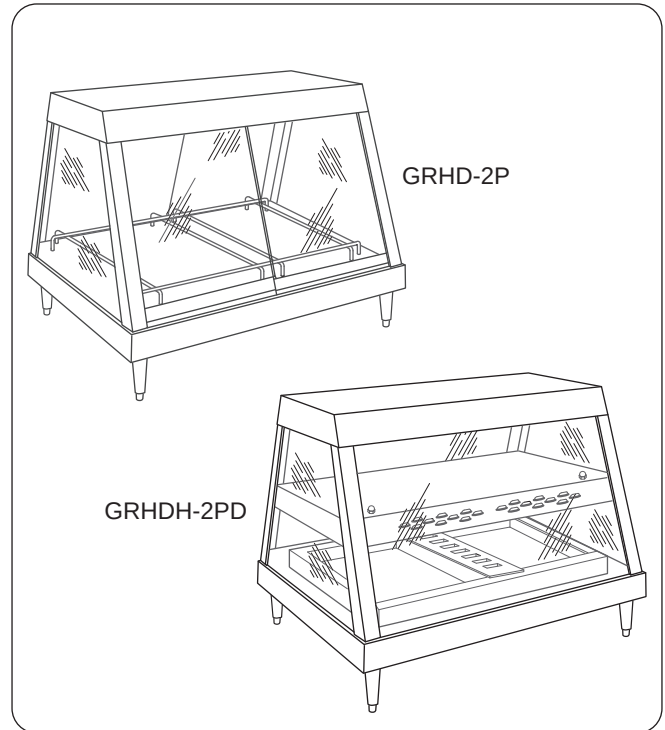
The GRHD-4PD is designed to hold up to four standard full size food pans on the bottom shelf and four standard half size food pans or two standard full size food pans on the top shelf.

GRHDH Series

The GRHDH series (Humidified) is similar to the GRHD series (Non-Humidified), but come equipped with a thermostatically controlled, adjustable humidity system. A 3 or 6 quart (2.8 or 5.7 liter) capacity heated water reservoir in the base provides humidity to extend food holding time up to four hours.

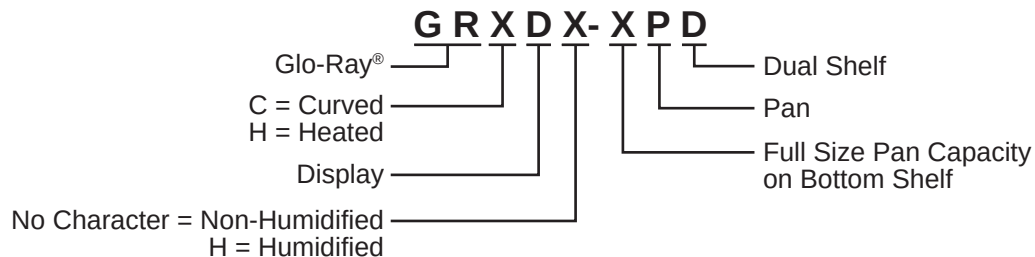
GRHDH models are available in two, three, or four pan sizes and with single or dual shelves.

NOTE: GRHD models cannot be converted to GRHDH models.



GRHD Models

MODEL DESIGNATION



SPECIFICATIONS

Plug Configurations

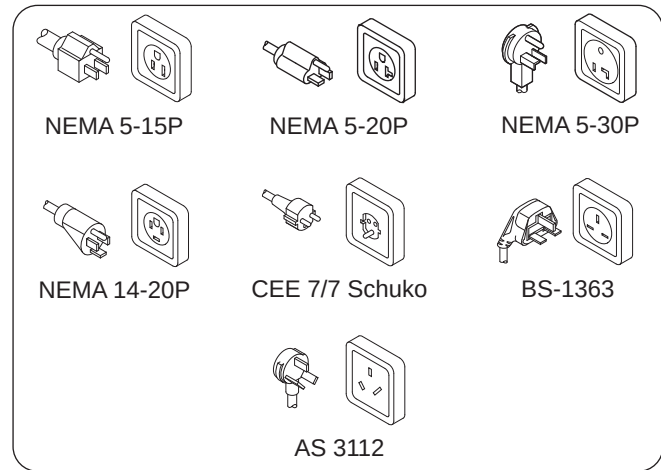
Units are supplied from the factory with an electrical cord and plug installed. Plugs are supplied according to the application.

WARNING

ELECTRIC SHOCK HAZARD: Plug unit into a properly grounded electrical receptacle of the correct voltage, size, and plug configuration. If plug and receptacle do not match, contact a qualified electrician to determine and install the proper voltage and size electrical receptacle.

NOTE: The specification label is located on the top rear of the unit. See label for serial number and verification of unit electrical information.

NOTE: Receptacle not supplied by Hatco.



Plug Configurations

Electrical Rating Chart — GRCD Models

Model	Voltage	Watts	Amps	Plug Configuration	Shipping Weight
GRCD-1P	120	410	3.4	NEMA 5-15P	95 lbs. (43 kg)
	220	405	1.8	CEE 7/7 Schuko or BS-1363	95 lbs. (43 kg)
	240	425	1.8	CEE 7/7 Schuko or AS 3112	95 lbs. (43 kg)
	220–230 (CE)	443	1.9	CEE 7/7 Schuko	95 lbs. (43 kg)
	230–240 (CE)	425	1.8	BS-1363	95 lbs. (43 kg)
GRCD-2P	120	780	6.5	NEMA 5-15P	120 lbs. (54 kg)
	220	710	3.2	CEE 7/7 Schuko or BS-1363	120 lbs. (54 kg)
	240	780	3.3	CEE 7/7 Schuko or AS 3112	120 lbs. (54 kg)
	220–230 (CE)	776	3.4	CEE 7/7 Schuko	120 lbs. (54 kg)
	230–240 (CE)	780	3.3	BS-1363	120 lbs. (54 kg)
GRCD-3P	120	1005	8.4	NEMA 5-15P	152 lbs. (69 kg)
	220	915	4.2	CEE 7/7 Schuko or BS-1363	152 lbs. (69 kg)
	240	1005	4.2	CEE 7/7 Schuko or AS 3112	152 lbs. (69 kg)
	220–230 (CE)	1000	4.4	CEE 7/7 Schuko	152 lbs. (69 kg)
	230–240 (CE)	1005	4.2	BS-1363	152 lbs. (69 kg)
GRCD-1PD	120	860	7.2	NEMA 5-15P	98 lbs. (45 kg)
	220	907	4.1	CEE 7/7 Schuko or BS-1363	98 lbs. (45 kg)
	240	905	3.8	CEE 7/7 Schuko or AS 3112	98 lbs. (45 kg)
	220–230 (CE)	907–992	4.1–4.3	CEE 7/7 Schuko	98 lbs. (45 kg)
	230–240 (CE)	831–905	3.6–3.8	BS-1363	98 lbs. (45 kg)
GRCD-2PD	120	1210	10.1	NEMA 5-15P	170 lbs. (77 kg)
	220	1080	4.9	CEE 7/7 Schuko or BS-1363	170 lbs. (77 kg)
	240	1285	5.4	CEE 7/7 Schuko or AS 3112	170 lbs. (77 kg)
	220–230 (CE)	1080–1180	4.9–5.1	CEE 7/7 Schuko	170 lbs. (77 kg)
	230–240 (CE)	1180–1285	5.1–5.4	BS-1363	170 lbs. (77 kg)
GRCD-3PD	120	1710	14.3	NEMA 5-15P*	210 lbs. (95 kg)
	220	1437	6.5	CEE 7/7 Schuko or BS-1363	210 lbs. (95 kg)
	240	1710	7.1	CEE 7/7 Schuko or AS 3112	210 lbs. (95 kg)
	220–230 (CE)	1437–1570	6.5–6.8	CEE 7/7 Schuko	210 lbs. (95 kg)
	230–240 (CE)	1570–1710	6.8–7.1	BS-1363	210 lbs. (95 kg)

The shaded areas contain electrical information for **International models only**.

* NEMA 5-20P for Canada.

Electrical Rating Chart — GRCDH Models

Model	Voltage	Watts	Amps	Plug Configuration	Shipping Weight
GRCDH-1P	120	660	5.5	NEMA 5-15P	90 lbs. (41 kg)
	220	634	2.9	CEE 7/7 Schuko or BS-1363	90 lbs. (41 kg)
	240	697	2.9	CEE 7/7 Schuko or AS 3112	90 lbs. (41 kg)
	220–230 (CE)	693	3.0	CEE 7/7 Schuko	90 lbs. (41 kg)
	230–240 (CE)	697	2.9	BS-1363	90 lbs. (41 kg)
GRCDH-2P	100	976	9.8	NEMA 5-15P	124 lbs. (56 kg)
	120	1030	8.6	NEMA 5-15P	124 lbs. (56 kg)
	220	939	4.3	CEE 7/7 Schuko or BS-1363	124 lbs. (56 kg)
	240	1052	4.4	CEE 7/7 Schuko or AS 3112	124 lbs. (56 kg)
	220–230 (CE)	1026	4.5	CEE 7/7 Schuko	124 lbs. (56 kg)
	230–240 (CE)	1052	4.4	BS-1363	124 lbs. (56 kg)
GRCDH-3P	100	1201	12.0	NEMA 5-15P	156 lbs. (71 kg)
	120	1255	10.5	NEMA 5-15P	156 lbs. (71 kg)
	220	1145	5.2	CEE 7/7 Schuko or BS-1363	156 lbs. (71 kg)
	240	1277	5.3	CEE 7/7 Schuko or AS 3112	156 lbs. (71 kg)
	220–230 (CE)	1251	5.4	CEE 7/7 Schuko	156 lbs. (71 kg)
	230–240 (CE)	1277	5.3	BS-1363	156 lbs. (71 kg)
GRCDH-1PD	100	1038	10.4	NEMA 5-15P	120 lbs. (54 kg)
	120	1110	9.3	NEMA 5-15P	120 lbs. (54 kg)
	220	1136	5.2	CEE 7/7 Schuko or BS-1363	120 lbs. (54 kg)
	240	1177	4.9	CEE 7/7 Schuko or AS 3112	120 lbs. (54 kg)
	220–230 (CE)	1136–1242	5.2–5.4	CEE 7/7 Schuko	120 lbs. (54 kg)
	230–240 (CE)	1081–1177	4.7–4.9	BS-1363	120 lbs. (54 kg)
GRCDH-2PD	120	1460	12.2	NEMA 5-15P*	174 lbs. (79 kg)
	220	1309	5.9	CEE 7/7 Schuko or BS-1363	174 lbs. (79 kg)
	240	1557	6.5	CEE 7/7 Schuko or AS 3112	174 lbs. (79 kg)
	220–230 (CE)	1309–1430	5.9–6.2	CEE 7/7 Schuko	174 lbs. (79 kg)
	230–240 (CE)	1430–1557	6.2–6.5	BS-1363	174 lbs. (79 kg)
GRCDH-3PD	120	1960	16.3	NEMA 5-20P†	220 lbs. (100 kg)
	220	1666	7.6	CEE 7/7 Schuko or BS-1363	220 lbs. (100 kg)
	240	1982	8.3	CEE 7/7 Schuko or AS 3112	220 lbs. (100 kg)
	220–230 (CE)	1666–1820	7.6–7.9	CEE 7/7 Schuko	220 lbs. (100 kg)
	230–240 (CE)	1820–1982	7.9–8.3	BS-1363	220 lbs. (100 kg)

The shaded areas contain electrical information for **International models only**.

* NEMA 5-20P for Canada.

† NEMA 5-30P for Canada. Not available for Canada with Backlit Base Sign Holder.

SPECIFICATIONS

Electrical Rating Chart — GRHD Models

Model	Voltage	Watts	Amps	Plug Configuration	Shipping Weight
GRHD-2P	120	940	7.8	NEMA 5-15P	120 lbs. (54 kg)
	220	1035	4.7	CEE 7/7 Schuko or BS-1363	120 lbs. (54 kg)
	240	940	3.9	CEE 7/7 Schuko or AS 3112	120 lbs. (54 kg)
	220–230 (CE)	1131	4.9	CEE 7/7 Schuko	120 lbs. (54 kg)
	230–240 (CE)	940	3.9	BS-1363	120 lbs. (54 kg)
GRHD-3P	120	1350	11.3	NEMA 5-15P	143 lbs. (65 kg)
	220	1465	6.7	CEE 7/7 Schuko or BS-1363	143 lbs. (65 kg)
	240	1350	5.6	CEE 7/7 Schuko or AS 3112	143 lbs. (65 kg)
	220–230 (CE)	1601	7.0	CEE 7/7 Schuko	143 lbs. (65 kg)
	230–240 (CE)	1350	5.6	BS-1363	143 lbs. (65 kg)
GRHD-4P	120	1785	14.9	NEMA 5-20P	215 lbs. (98 kg)
	120/208	1785	7.7	NEMA 14-20P	215 lbs. (98 kg)
	120/240	1785	7.7	NEMA 14-20P	215 lbs. (98 kg)
	220	1930	8.8	CEE 7/7 Schuko or BS-1363	215 lbs. (98 kg)
	240	1785	7.4	CEE 7/7 Schuko or AS 3112	215 lbs. (98 kg)
	220–230 (CE)	2109	9.2	CEE 7/7 Schuko	215 lbs. (98 kg)
	230–240 (CE)	1785	7.4	BS-1363	215 lbs. (98 kg)
GRHD-2PD	120	1310	10.9	NEMA 5-15P	150 lbs. (68 kg)
	220	1223	5.6	CEE 7/7 Schuko or BS-1363	150 lbs. (68 kg)
	240	1310	5.5	CEE 7/7 Schuko or AS 3112	150 lbs. (68 kg)
	220–230 (CE)	1220–1333	5.6–5.8	CEE 7/7 Schuko	150 lbs. (68 kg)
	230–240 (CE)	1203–1310	5.2–5.5	BS-1363	150 lbs. (68 kg)
GRHD-3PD	120	1755	14.6	NEMA 5-20P	188 lbs. (85 kg)
	220	1603	7.3	CEE 7/7 Schuko or BS-1363	188 lbs. (85 kg)
	240	1755	7.3	CEE 7/7 Schuko or AS 3112	188 lbs. (85 kg)
	220–230 (CE)	1603–1753	7.3–7.6	CEE 7/7 Schuko	188 lbs. (85 kg)
	230–240 (CE)	1612–1755	7.0–7.3	BS-1363	188 lbs. (85 kg)
GRHD-4PD	120	2480	20.7	NEMA 5-30P	230 lbs. (104 kg)
	120/208	2480	11.9	NEMA 14-20P	230 lbs. (104 kg)
	120/240	2480	11.9	NEMA 14-20P	230 lbs. (104 kg)
	220	2288	10.4	CEE 7/7 Schuko or BS-1363	230 lbs. (104 kg)
	240	2480	10.3	CEE 7/7 Schuko or AS 3112	230 lbs. (104 kg)
	220–230 (CE)	2288–2501	10.4–10.9	CEE 7/7 Schuko	230 lbs. (104 kg)
	230–240 (CE)	2278–2480	9.9–10.3	BS-1363	230 lbs. (104 kg)

The shaded areas contain electrical information for **International models only**.

Electrical Rating Chart — GRHDH Models

Model	Voltage	Watts	Amps	Plug Configuration	Shipping Weight
GRHDH-2P	120	1190	9.9	NEMA 5-15P	125 lbs. (57 kg)
	220	1179	5.4	CEE 7/7 Schuko or BS-1363	125 lbs. (57 kg)
	240	1212	5.0	CEE 7/7 Schuko or AS 3112	125 lbs. (57 kg)
	220–230 (CE)	1289	5.6	CEE 7/7 Schuko	125 lbs. (57 kg)
	230–240 (CE)	1212	5.0	BS-1363	125 lbs. (57 kg)
GRHDH-3P	120	1600	13.3	NEMA 5-15P*	162 lbs. (73 kg)
	220	1584	7.2	CEE 7/7 Schuko or BS-1363	162 lbs. (73 kg)
	240	1622	6.8	CEE 7/7 Schuko or AS 3112	162 lbs. (73 kg)
	220–230 (CE)	1731	7.5	CEE 7/7 Schuko	162 lbs. (73 kg)
	230–240 (CE)	1622	6.8	BS-1363	162 lbs. (73 kg)
GRHDH-4P	120	2285	19.0	NEMA 5-20P	215 lbs. (98 kg)
	120/208	2285	9.8	NEMA 14-20P	215 lbs. (98 kg)
	120/240	2285	9.8	NEMA 14-20P	215 lbs. (98 kg)
	220	2253	10.2	CEE 7/7 Schuko or BS-1363	215 lbs. (98 kg)
	240	2329	9.7	CEE 7/7 Schuko or AS 3112	215 lbs. (98 kg)
	220–230 (CE)	2463	10.7	CEE 7/7 Schuko	215 lbs. (98 kg)
	230–240 (CE)	2329	9.7	BS-1363	215 lbs. (98 kg)
GRHDH-2PD	120	1560	13.0	NEMA 5-15P*	175 lbs. (79 kg)
	220	1532	7.0	CEE 7/7 Schuko or BS-1363	175 lbs. (79 kg)
	240	1582	6.6	CEE 7/7 Schuko or AS 3112	175 lbs. (79 kg)
	220–230 (CE)	1532–1671	7.0–7.3	CEE 7/7 Schuko	175 lbs. (79 kg)
	230–240 (CE)	1453–1582	6.3–6.6	BS-1363	175 lbs. (79 kg)
GRHDH-3PD	120	2005	16.7	NEMA 5-20P♦	188 lbs. (85 kg)
	220	1962	8.9	CEE 7/7 Schuko or BS-1363	188 lbs. (85 kg)
	240	2027	8.4	CEE 7/7 Schuko or AS 3112	188 lbs. (85 kg)
	220–230 (CE)	1962–2145	8.9–9.3	CEE 7/7 Schuko	188 lbs. (85 kg)
	230–240 (CE)	1862–2027	8.1–8.4	BS-1363	188 lbs. (85 kg)
GRHDH-4PD	120	2980	24.8	NEMA 5-30P‡	240 lbs. (109 kg)
	120/208	2980	12.9	NEMA 14-20P	240 lbs. (109 kg)
	120/240	2980	12.9	NEMA 14-20P	240 lbs. (109 kg)
	220	2941	13.4	CEE 7/7 Schuko or BS-1363	240 lbs. (109 kg)
	240	3024	12.6	CEE 7/7 Schuko or AS 3112	240 lbs. (109 kg)
	220–230 (CE)	2941–3214	13.4–14.0	CEE 7/7 Schuko	240 lbs. (109 kg)
	230–240 (CE)	2777–3024	12.1–12.6	BS-1363	240 lbs. (109 kg)

The shaded areas contain electrical information for **International models only**.

* NEMA 5-20P for Canada.

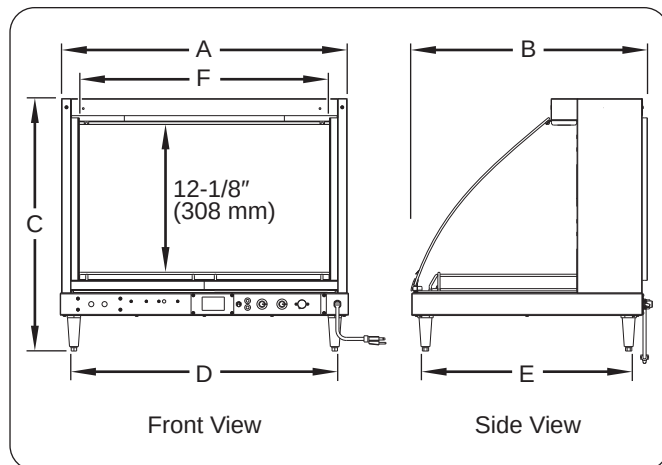
♦ NEMA 5-30P for Canada.

‡ Not available for Canada.

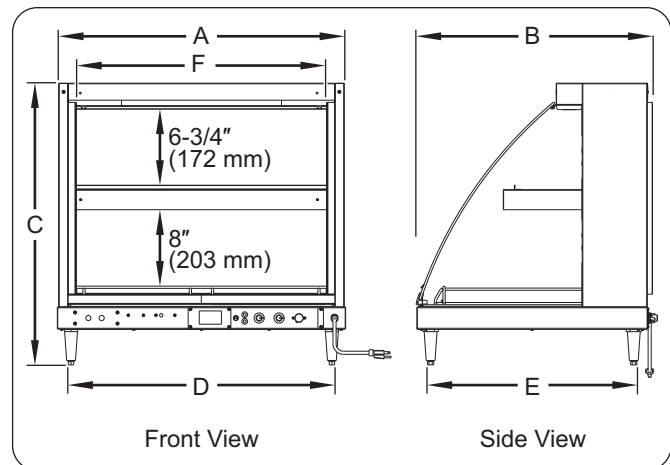
SPECIFICATIONS

Dimensions — GRCD Series

Model	Width (A)	Depth (B)	Height (C)	Footprint Width (D)	Footprint Depth (E)	Heated Shelf Width (F)
GRCD-1P and GRCDH-1P	20-5/8" (524 mm)	26" (660 mm)	24" (610 mm)	18-1/8" (461 mm)	24" (610 mm)	18-1/8" (460 mm)
GRCD-2P and GRCDH-2P	32-1/2" (826 mm)	26" (660 mm)	24" (610 mm)	30-1/2" (775 mm)	24" (610 mm)	30" (762 mm)
GRCD-3P and GRCDH-3P	45-1/2" (1156 mm)	26" (660 mm)	24" (610 mm)	43-1/2" (1105 mm)	24" (610 mm)	43" (1092 mm)
GRCD-1PD and GRCDH-1PD	20-5/8" (524 mm)	26" (660 mm)	31-3/4" (807 mm)	18-1/8" (461 mm)	24" (610 mm)	18-1/8" (460 mm)
GRCD-2PD and GRCDH-2PD	32-1/2" (826 mm)	26" (660 mm)	31-3/4" (807 mm)	30-1/2" (775 mm)	24" (610 mm)	30" (762 mm)
GRCD-3PD and GRCDH-3PD	45-1/2" (1156 mm)	26" (660 mm)	31-3/4" (807 mm)	43-1/2" (1105 mm)	24" (610 mm)	43" (1092 mm)



Single Shelf GRCD Dimensions



Dual Shelf GRCD Dimensions

NOTE: On **single** shelf units, the interior height dimension without the pan enclosure installed is 14-1/8" (359 mm).

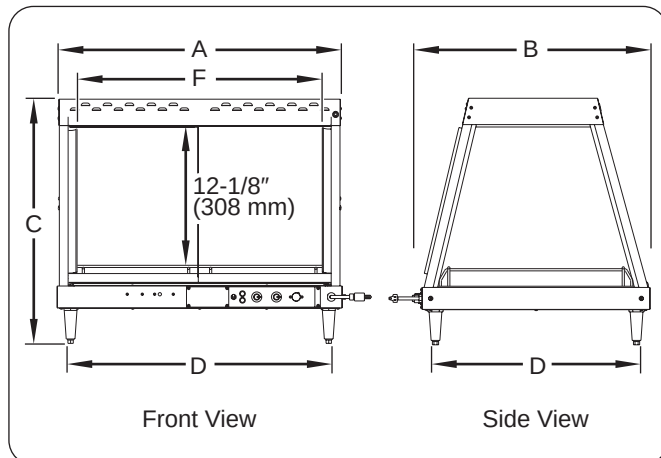
NOTE: On **dual** shelf units, the lower shelf interior height dimension without the pan enclosure installed is 10-1/4" (260 mm). The upper shelf interior height dimension without the pan enclosure installed is 9" (229 mm).

NOTE: On **dual** shelf units, the interior usable space dimension for the upper shelf is as follows:

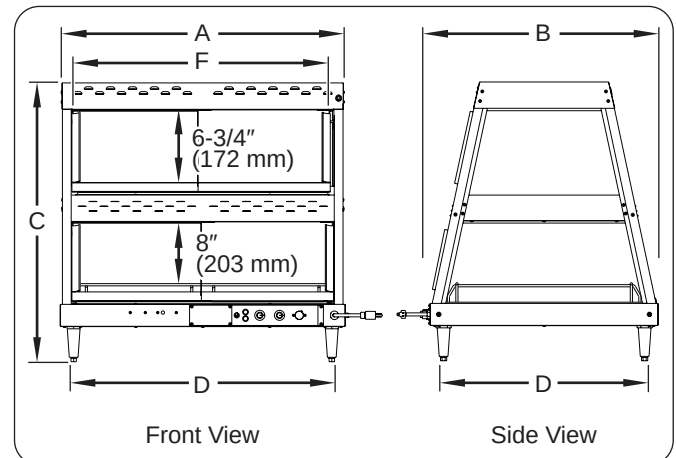
- 15" (381 mm) deep
- 18" (457 mm) wide for -1PD model
- 30" (762 mm) wide for -2PD models
- 43" (1092 mm) wide for -3PD models

Dimensions—GRHD Series

Model	Width (A)	Depth (B)	Height (C)	Footprint Width (D)	Footprint Depth (E)	Heated Shelf Width (F)
GRHD-2P and GRHDH-2P	32-1/2" (826 mm)	26" (660 mm)	25" (635 mm)	30" (763 mm)	23-1/2" (598 mm)	28" (711 mm)
GRHD-3P and GRHDH-3P	45-1/2" (1156 mm)	26" (660 mm)	25" (635 mm)	43" (1093 mm)	23-1/2" (598 mm)	41" (1014 mm)
GRHD-4P and GRHDH-4P	58-1/2" (1486 mm)	26" (660 mm)	25" (635 mm)	56" (1423 mm)	23-1/2" (598 mm)	54" (1372 mm)
GRHD-2PD and GRHDH-2PD	32-1/2" (826 mm)	26" (660 mm)	30" (762 mm)	30" (763 mm)	23-1/2" (598 mm)	28" (711 mm)
GRHD-3PD and GRHDH-3PD	45-1/2" (1156 mm)	26" (660 mm)	30" (762 mm)	43" (1093 mm)	23-1/2" (598 mm)	41" (1014 mm)
GRHD-4PD and GRHDH-4PD	58-1/2" (1486 mm)	26" (660 mm)	30" (762 mm)	56" (1423 mm)	23-1/2" (598 mm)	54" (1372 mm)



Single Shelf GRHD Dimensions



Dual Shelf GRHD Dimensions

INSTALLATION

General

Glo-Ray® Heated Display Cases are shipped with most components pre-assembled. Care should be taken when unpacking shipping carton to avoid damage to unit and components enclosed.

⚠ WARNING

ELECTRIC SHOCK HAZARD: Unit is not weatherproof. Locate unit indoors where ambient air temperature is a minimum of 70°F (21°C).

FIRE HAZARD: Locate unit a minimum of 1" (25 mm) from combustible walls and materials. If safe distances are not maintained, discoloration or combustion could occur.

⚠ CAUTION

Locate unit at proper counter height in an area that is convenient for use. Location should be level to prevent unit or its contents from falling accidentally and strong enough to support weight of unit and contents.

The National Sanitation Foundation (NSF) requires that units over 36" (914 mm) in width or weighing more than 80 lbs. (36 kg) either be sealed to or raised above the installation surface. If unit cannot be sealed at the point of use, 4" (102 mm) legs are included to allow for proper cleaning access below unit.

Transport unit in upright position only. Before moving or tipping unit, secure all glass surfaces, doors, pan rails, and/or skirts with tape, and drain water from humidified units. Failure to do so may result in damage and injury.

NOTICE

Do not remove rubber shipping tabs or tape from glass surfaces until legs have been installed. Damage to glass could occur.

NOTE: Unit must be transported in the upright position.

1. Remove the unit from the carton. Two people are required for this step.

NOTE: To prevent delay in obtaining warranty coverage, complete online warranty registration. See the IMPORTANT OWNER INFORMATION section for details.

2. Perform either "Assembling GRCD Models" or "Assembling GRHD Models" in this section, depending on the unit.

3. Place the unit in the desired location.

- Locate the unit in an area where the ambient air temperature is constant and a minimum of 70° F (21° C). Avoid areas that may be subject to active air movements or currents (i.e., near exhaust fans/hoods and air conditioning ducts).
- Make sure the unit is at the proper counter height in an area convenient for use.
- Make sure the countertop is level and strong enough to support the weight of the unit and food product.
- Make sure all the feet on the bottom of the unit are positioned securely on the countertop.

Assembling GRCD Models

Position the unit upright on the counter near the location it will be used. Installation of the following items is required before operating the unit.

1. Remove plastic bag containing the 4" (102 mm) adjustable legs from inside the unit.
2. Remove the pan rail (GRCD units); or pan skirts and water reservoir (GRCDH units).
3. Remove the front curved glass by rotating it partially forward and lifting straight up and off. Discard the rubber packing strips.
4. Remove rear doors on 2-pan and 3-pan models by grasping the door edges then lifting up and out of the bottom channel. Discard the protective cardboard from top of each door.

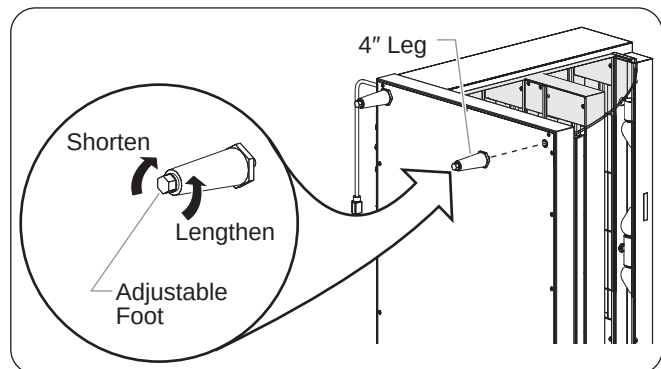
NOTE: Do not remove the plastic glides from the top of the door glass before completing assembly.

NOTE: Models GRCD-1P and GRCDH-1P have a single, hinged door that does not need to be removed.

NOTICE

Do not lay unit on the side with control panel or on front of a curved glass unit. Damage to unit could occur.

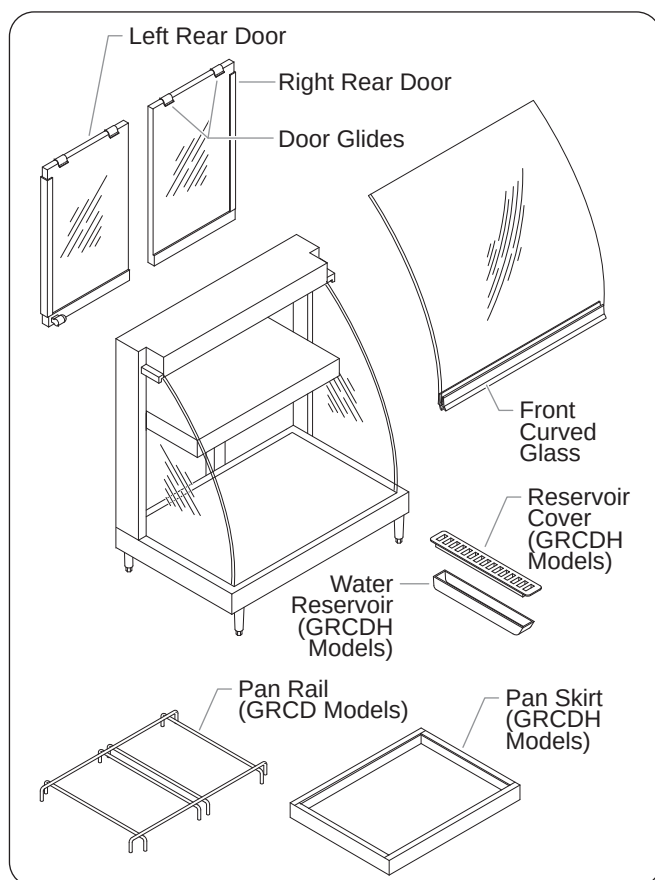
5. Carefully lay the unit on its side. Two people are required for this step.
6. Install the 4" (102 mm) legs to the bottom of the unit. Hand tighten the legs until snug. Do not over-tighten.



Installing the 4" (102 mm) Legs—GRCD Models

NOTE: The feet on the 4" legs are adjustable for leveling the unit. Use a 9/16" (14 mm) open-end wrench to make leveling adjustments once the unit is placed in its final position.

7. Return the unit to the upright position. Two people are required for this step.
8. Remove tape and protective packaging from all surfaces of the unit and any accessories.
9. Install the pan rail (GRCD units); or pan skirts and water reservoir (GRCDH units).
10. Install the rear doors and front curved glass.



GRCD Model

Assembling GRHD Models

1. Remove plastic bag containing the 4" (102 mm) adjustable legs from inside the unit.
2. Remove all components from inside the unit.
3. Remove all doors by grasping the door edges then lifting up and out of the bottom channel. Discard the protective cardboard from the top of each door.

NOTE: Do not remove the plastic glides from the top of the door glass before completing assembly.

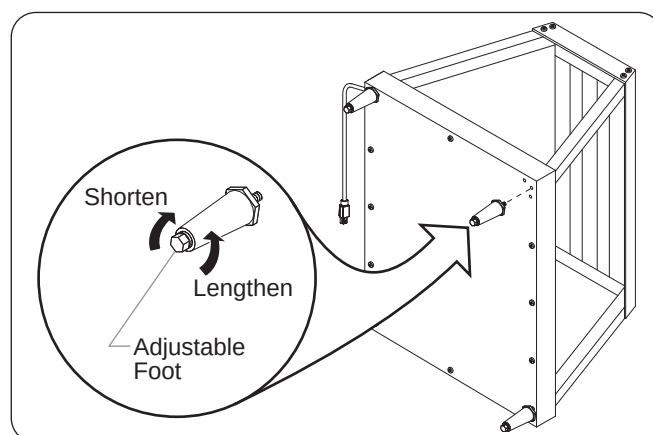
NOTICE

Do not lay unit on the side with control panel or on front of a heated display unit. Damage to unit could occur.

4. Carefully lay the unit on its side. Two people are required for this step.
5. Install the 4" (102 mm) legs to the bottom of the unit. Hand tighten the legs until snug. Do not over-tighten.

NOTE: The feet on the 4" legs are adjustable for leveling the unit. Use a 9/16" (14 mm) open-end wrench to make leveling adjustments once the unit is placed in its final position.

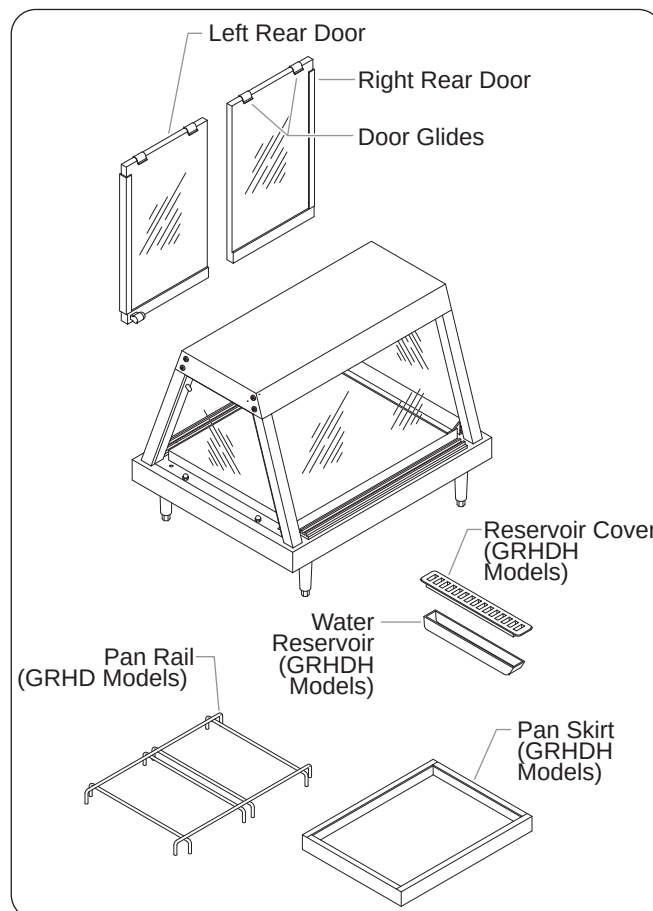
NOTE: If the unit is supplied with the optional Slant Leg Kit, see the OPTIONS AND ACCESSORIES section for installation instructions.



Installing the 4" (102 mm) Legs—GRHD Models

6. Return the unit to the upright position. Two people are required for this step.
7. Remove tape and protective packaging from all surfaces of the unit and any accessories.
8. Install the pan rail (GRHD units); or pan skirt, divider, and water reservoir (GRHDH units).
9. Install all the doors.

NOTE: If the unit is supplied with the optional Display Sign Holder, see the OPTIONS AND ACCESSORIES section for installation instructions.



GRHD Model

OPERATION

General

Use the following procedures to operate the Glo-Ray® Heated Display Cases.



WARNING

Read all safety messages in the **IMPORTANT SAFETY INFORMATION** section before operating this equipment.

Do not place food product directly onto shelves. Food product must be wrapped, boxed, or on a food pan.

Startup

Perform the following step for startup of all models, and then proceed to the appropriate section for the remaining steps for startup.

1. Plug unit into a properly grounded electrical receptacle of the correct voltage, size and plug configuration. See the SPECIFICATIONS section for details.

GRCD and GRHD (Non-Humidified) Models

1. Move the Power ON/OFF (I/O) switch on the base to the ON (I) position.
2. Turn the BASE HEAT CONTROL to the desired temperature setting.
3. Turn the TOP HEAT CONTROL and the CENTER HEAT CONTROL (dual units only) to the desired temperature setting.

NOTE: On dual shelf models, the TOP HEAT and CENTER HEAT indicator lights will illuminate when controls are in the ON position.



CAUTION

BURN HAZARD: Some exterior surfaces on unit will get hot. Use caution when touching these areas.

4. Allow unit 30 minutes to reach operating temperature.

GRCDH and GRHDH (Humidified) Models

1. Remove the center slotted pan divider from the water reservoir (two dividers on GRHD-4P and -4PD models).
2. Move the Power ON/OFF (I/O) switch to the ON (I) position.
3. Rotate the HUMIDITY CONTROL to the desired position.
 - The HUMIDITY ON Indicator (green) will light up to show that humidity is on. The LOW WATER indicator (red) will light when the water reservoir is empty.
 - The unit can be run without humidity by turning the HUMIDITY CONTROL to the OFF (O) position.

4. Fill the water reservoir with softened or distilled water. Each reservoir has a 3 quart (2.8 liter) capacity. If the red LOW WATER indicator is on, press the red Reset Button located to the left of the indicator light.

NOTE: Use of softened or distilled water is recommended to preserve the life of electrical and mechanical components. If hard water is used, the reservoir will require periodic cleaning and deliming. See the MAINTENANCE section for deliming instructions.

NOTE: The reservoir capacity permits uninterrupted operation for approximately 4 hours, depending on the settings and how frequently the door is opened. When the red LOW WATER indicator is lit, add water to the reservoir and press the red Reset Button.

5. Re-install the center pan divider.
6. Turn the BASE HEAT CONTROL to the desired temperature setting.
7. Turn the TOP HEAT CONTROL and the CENTER HEAT CONTROL (dual units only) to the desired temperature setting.

NOTE: On dual shelf models, the TOP HEAT and CENTER HEAT indicator lights will illuminate when controls are in the ON position.

NOTE: Temperature and humidity settings may vary depending upon product make-up and consistency.



CAUTION

BURN HAZARD: Some exterior surfaces on unit will get hot. Use caution when touching these areas.

8. Allow unit 30 minutes to reach operating temperature.

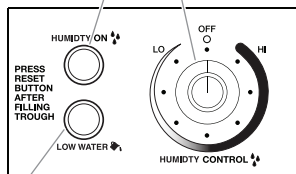
Shutdown

Perform the following steps for shutdown of all models.

1. Move the Power ON/OFF (I/O) switch on the base to the OFF (O) position.
2. Perform the "Daily Cleaning" procedure in the MAINTENANCE section of this manual.

HUMIDITY ON Indicator Light

HUMIDITY CONTROL

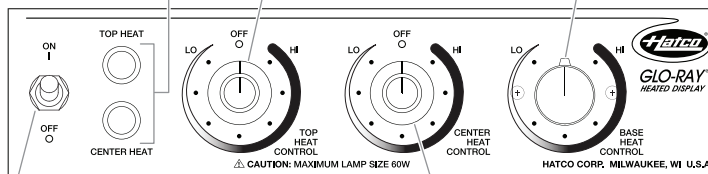


LOW WATER Indicator Light

Heat Indicator Lights

TOP HEAT CONTROL

BASE HEAT CONTROL



Power ON/OFF (I/O) Switch

CENTER HEAT CONTROL (Duals Only)

Controls (GRHDH-2PD shown)

General

Hatco Glo-Ray Heated Display Cases are designed for maximum durability and performance, with minimum maintenance.

WARNING

ELECTRIC SHOCK HAZARD:

- Turn OFF power switch, unplug power cord, and allow unit to cool before performing any cleaning, adjustments, or maintenance.
- DO NOT submerge or saturate with water. Unit is not waterproof. Do not operate if unit has been submerged or saturated with water.
- Do not steam clean or use excessive water on unit.
- This unit is not “jet-proof” construction. Do not use jet-clean spray to clean this unit.
- This unit must be serviced by qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.
- Do not clean unit when it is energized or hot.
- Use only Genuine Hatco Replacement Parts when service is required. Failure to use Genuine Hatco Replacement Parts will void all warranties and may subject operators of the equipment to hazardous electrical voltage, resulting in electrical shock or burn. Genuine Hatco Replacement Parts are specified to operate safely in the environments in which they are used. Some aftermarket or generic replacement parts do not have the characteristics that will allow them to operate safely in Hatco equipment.

This unit has no “user-serviceable” parts. If service is required on this unit, contact an Authorized Hatco Service Agent or contact the Hatco Service Department at 800-558-0607 or 414-671-6350; fax 800-690-2966; or International fax 414-671-3976.

Daily Cleaning

To preserve the finish of the unit as well as maintain performance, it is recommended that the unit be cleaned daily.

NOTICE

Use non-abrasive cleaners and cloths only. Abrasive cleaners and cloths could scratch finish of unit, marring its appearance and making it susceptible to soil accumulation.

1. Turn off the unit, unplug the power cord, and allow the unit to cool.
2. Wipe down all exterior and interior surfaces. A non-abrasive cleaner may be used for difficult stains. Hard to reach areas should be cleaned using a small brush and mild soap.
 - Make sure to clean the interior of the unit thoroughly.
 - Clean the glass front, side, and rear panels using ordinary glass cleaner and a damp, soft cloth or paper towel.
3. Empty and clean the water reservoir using a damp cloth (humidified units only).
4. Wipe dry the entire unit with a clean, non-abrasive cloth.

Removing Lime and Mineral Deposits

Use the following procedure for periodic cleaning and deliming of the water reservoir on humidified models.

NOTICE

Use of distilled water in the water reservoir of humidified units is recommended to preserve the life of electrical and mechanical components. If non-distilled water is used, the reservoir will require periodic cleaning and deliming (refer to the MAINTENANCE section for cleaning procedure). Unit failure due to lime or mineral deposits is not covered under warranty.

NOTE: The lime and mineral content of the water used for daily operation will determine how often the deliming procedure must be performed.

NOTE: Perform this procedure when the unit will not be used for a period of time, such as the end of the day.

1. Move the Power ON/OFF (I/O) switch to the OFF (O) position and unplug the power cord. Allow the unit to cool.
2. Remove the water reservoir cover and water reservoir. Empty the water reservoir.
3. Reinstall the water reservoir.
4. Fill the water reservoir with a mixture of 75% water and 25% white vinegar. Do not use flavored vinegar.
5. Plug in and turn on the unit. Allow the unit to run for 30 minutes.
6. Move the Power ON/OFF (I/O) switch to the OFF (O) position and unplug the power cord. Allow the unit to cool.
7. Empty the deliming mixture from the water reservoir.
8. Continue to fill and rinse the water reservoir with clean water until the reservoir is clean.
9. Install the water reservoir into the unit and fill the reservoir as usual for daily operation.
10. Install the water reservoir cover.

Replacing Display Light Bulbs

WARNING

Use only light bulbs that meet or exceed National Sanitation Foundation (NSF) standards and are specifically designed for food holding areas. Breakage of light bulbs not specially coated could result in personal injury and/or food contamination.

The display lights are incandescent light bulbs that illuminate the warming area. Each bulb has a special coating to guard against injury and food contamination in the event of breakage.

1. Turn off the unit, unplug the power cord, and allow the unit to cool.
2. Unscrew the light bulb from the unit and replace it with a new, specially-coated incandescent light bulb.

NOTE: Hatco shatter-resistant light bulbs meet NSF standards for food holding and display areas. For 120, 120/208, and 120/240 V applications, use Hatco P/N 02.30.043.00. For 220 or 240 V applications, use Hatco P/N 02.30.058.00.

MAINTENANCE

Replacing a Fuse

Use the following procedure to replace a damaged fuse(s).

1. Move the Power ON/OFF (I/O) switch to the OFF (O) position and unplug the power cord. Allow the unit to cool.
2. Remove all components inside of the unit.
3. Remove the glass door(s) and side panel(s).
4. Carefully lay the unit on its side. Two people are required for this step.
5. Remove the 4" (102 mm) legs from the bottom of the unit.
6. Remove all screws on the bottom panel of the unit and remove the bottom panel.
7. Locate the fuse box and remove the damaged fuse(s).
8. Replace with a new fuse(s).
9. Reverse the above procedure to reassemble.

TROUBLESHOOTING GUIDE

WARNING

This unit must be serviced by trained and qualified personnel only. Service by unqualified personnel may lead to electric shock or burn.

WARNING

ELECTRIC SHOCK HAZARD: Turn OFF power switch, unplug power cord, and allow unit to cool before performing any cleaning, adjustments, or maintenance.

Symptom	Probable Cause	Corrective Action
LOW WATER Light is lit.	Low amount of water in unit.	Fill the water reservoir with water. Each reservoir has a 3 quart (2.8 liter) capacity. Press the red Reset Button (located to the left of the indicator light) after filling reservoir.
Heat is too hot.	Heat controls set too high.	Adjust heat controls to a lower setting.
	Heat control(s) defective.	Contact Authorized Service Agent or Hatco for assistance.
	Unit plugged into incorrect/high voltage.	Verify that voltage supply matches electrical information listed on the unit.
Heat is not hot enough.	Heat controls set too low.	Adjust heat controls to a higher setting.
	Heat control(s) defective.	Contact Authorized Service Agent or Hatco for assistance.
	Heating element(s) not working.	Contact Authorized Service Agent or Hatco for assistance.
Unit is on, but no lights.	Blown fuse.	Replace blown fuse, follow "Replacing a Fuse" procedure in the MAINTENANCE section.
No heat.	Heating elements not working.	Contact Authorized Service Agent or Hatco for assistance.
	Heat controls not working properly.	Contact Authorized Service Agent or Hatco for assistance.
	Unit plugged into incorrect/low voltage.	Verify that voltage supply matches electrical information listed on the unit.
No heat and no lights.	Power ON/OFF (I/O) switch turned OFF.	Move Power ON/OFF (I/O) switch to ON (I) position.
	Unit not plugged in or outlet not working.	Plug in unit, have outlet repaired by a certified electrician, or use a different outlet.
	Circuit breaker tripped.	Reset circuit breaker. If circuit breaker continues to trip, contact Authorized Service Agent or Hatco for assistance.
	Power ON/OFF(I/O) switch defective.	Contact Authorized Service Agent or Hatco for assistance.

OPTIONS AND ACCESSORIES

Slant Leg Kit

A slant leg kit is available as an accessory for non-humidified GRHD models. Slanted legs tilt the unit forward for optimum display of food product. Use the following procedure to install the slant leg kit.

1. Remove loose items inside of the unit.
2. Carefully lay the unit on its side (requires two people).
3. Remove the screws from the bottom right and the bottom left side of the unit.
4. Position the slant leg over the screw holes with the long leg towards the rear, and install using original screws.
5. Return the unit to the upright position and adjust feet to desired height. Feet have an adjustable range of 3/4" (19 mm) to 1-1/2" (38 mm).

Display Sign Holder (GRHD Series)

Display sign holders are available accessories for the GRHD series. Use the following procedure to install a display sign holder to the unit.

1. Remove the screws from the upper left and right side of the unit.
2. Position the sign holder over the screw holes and install using the original screws.
3. Insert sign (not included) and slide on the plexiglass cover.

Display Sign Holder (GRCD Series)

Display sign holders are available accessories for the GRCD series. A display sign holder adds 8-1/4" (210 mm) to the height of the unit. Use the following procedure to install a display sign holder to the unit.

1. Remove the screws from the upper left and right side of the unit.
2. Position the sign holder over the screw holes and install using the original screws.
3. Insert sign (not included) and slide on the plexiglass cover.

Backlit Base Sign Holder

A backlit base sign holder is a factory installed option for the GRCD series.

Mirrored Glass Doors

Mirrored Glass Doors are available options for all GRHD and GRCD models. A one way mirror enhances food displays on the customer side while allowing the operator to review food from rear.

Self Closing Flip-Up Doors

Self closing flip-up doors are available for the GRCD dual series.

Double-Sided Opening

A front sliding or flip-up door is an available option for the GRHD series. A front sliding or flip-up door allows access from the operator and the customer side of the unit.

Sneeze Guard

A sneeze guard is available as an option for GRHD series. A sneeze guard takes the place of sliding doors.

Pan Skirts

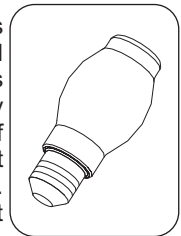
Various pan skirts are available for the GRHD and GRCD series.

Food Pans and Trivets

Stainless steel food holding pans are available in either 2-1/2" (64 mm) or 4" (102 mm) depths. These pans are offered in full size, half size, or third size. Optional wire trivets prevents food from touching pan bottom.

Halogen Display Light Bulbs

Shatter-resistant halogen display light bulbs can be ordered in place of the standard incandescent display light bulbs. The bulbs have a special coating to guard against injury and food contamination in the event of breakage. For 120, 120/208, and 120/240 volt applications, use Hatco P/N 02.30.081.00. For 220, 240, 220-230, and 230-240 volt applications, use Hatco P/N 02.30.082.00.



1. PRODUCT WARRANTY

Hatco warrants the products that it manufactures (the "Products") to be free from defects in materials and workmanship, under normal use and service, for a period of one (1) year from the date of purchase when installed and maintained in accordance with Hatco's written instructions or 18 months from the date of shipment from Hatco. Buyer must establish the Product's purchase date by registering the Product with Hatco or by other means satisfactory to Hatco in its sole discretion.

Hatco warrants the following Product components to be free from defects in materials and workmanship from the date of purchase (subject to the foregoing conditions) for the period(s) of time and on the conditions listed below:

a) One (1) Year Parts and Labor PLUS One (1) Additional Year Parts-Only Warranty:

Conveyor Toaster Elements (metal sheathed)
Drawer Warmer Elements (metal sheathed)
Drawer Warmer Drawer Rollers and Slides
Strip Heater Elements (metal sheathed)
Display Warmer Elements (metal sheathed air heating)
Holding Cabinet Elements (metal sheathed air heating)
Heated Well Elements — HWB Series (metal sheathed)

b) One (1) Year Parts and Labor PLUS Four (4) Years Parts-Only Warranty:

3CS and FR Tanks

c) One (1) Year Parts and Labor PLUS Nine (9) Years Parts-Only Warranty on:

Electric Booster Heater Tanks
Gas Booster Heater Tanks

d) Ninety (90) Day Parts-Only Warranty:

Replacement Parts

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR PATENT OR OTHER INTELLECTUAL PROPERTY RIGHT INFRINGEMENT. Without limiting the generality of the foregoing, SUCH WARRANTIES DO NOT COVER: Coated incandescent light bulbs, fluorescent lights, heat lamp bulbs, coated halogen light bulbs, halogen heat lamp bulbs, xenon light bulbs, LED light tubes, glass components, and fuses; Product failure in booster tank, fin tube heat exchanger, or other water heating equipment caused by liming, sediment buildup, chemical attack, or freezing; or Product misuse, tampering or misapplication, improper installation, or application of improper voltage.

2. LIMITATION OF REMEDIES AND DAMAGES

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